

**DEPARTMENT OF CONSUMER AND INDUSTRY SERVICES**  
**DIRECTOR'S OFFICE**  
**OCCUPATIONAL HEALTH STANDARDS**

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**PART 682. NONIONIZING RADIATION**

**Rule 6270 Nonionizing Radiation (Laser Equipment).**

(1) Only qualified and trained employees shall be assigned to install, adjust, and operate laser equipment. [1926.54(a)]

(2) Proof of qualification of the laser equipment operator shall be available and in possession of the operator at all times. [1926.54 (b)]

(3) Employees, when working in areas in which a potential exposure to direct or reflected laser light greater than 0.005 watts (5 milliwatts) exists, shall be provided with antilaser eye protection devices as specified below. [1926.54(c)]

(a) Employees whose occupation or assignment requires exposure to laser beams shall be furnished suitable laser safety goggles which will protect for the specific wavelength of the laser and be of optical density (O.D.) adequate for the energy involved. Table E-3 lists the maximum power or energy density for which adequate protection is afforded by glasses of optical densities from 5 through 8. [1926.102(b)(2)(i)]

**TABLE E-3**  
**SELECTING LASER SAFETY GLASS**

Intensity	Attenuation	
	Optical Density (O.D)	Attenuation Factor
$10^{-2}$	5	$10^5$
$10^{-1}$	6	$10^6$
1.0	7	$10^7$
10.0	8	$10^8$

Output levels falling between lines in this table shall require the higher optical density.

(b) All protective goggles shall bear a label identifying the following data: [1926.102(b)(2)(ii)]

(i) The laser wavelengths for which use is intended; [1926.102(b)(2)(ii)(a)]

(ii) The optical density of those wavelengths; [1926.102(b)(2)(ii)(b)]

(iii) The visible light transmission. [1926.102(b)(2)(ii)(c)]

(4) Areas in which lasers are used shall be posted with standard laser warning placards. [1926.54(d)]

(5) Beam shutters or caps shall be utilized, or the laser turned off, when laser transmission is not actually required. When the laser is left unattended for a substantial period of time, such as during lunch hour, overnight, or at change of shifts, the laser shall be turned off. [1926.54(e)]

(6) Only mechanical or electronic means shall be used as a detector for guiding the internal alignment of the laser. [1926.54(f)]

(7) The laser beam shall not be directed at employees. [1926.54(g)]

(8) When it is raining or snowing, or when there is dust or fog in the air, the operation of laser systems shall be prohibited where practicable; in any event, employees shall be kept out of range of the area of source and target during such weather conditions. [1926.54(h)]

(9) Laser equipment shall bear a label to indicate output. [1926.54(i)]

(10) Employees shall not be exposed to light intensities above: [1926.54(j)]

(a) Direct staring: 1 micro-watt per square centimeter; [1926.54(j)(1)]

(b) Incidental observing: 1 milliwatt per square centimeter; [1926.54(j)(2)]

(c) Diffused reflected light: 2-1/2 watts per square centimeter. [1926.54(j)(3)]

(11) Laser unit in operation should be set up above the heads of the employees, when possible. [1926.54(k)]

(12) Employees shall not be exposed to microwave power densities in excess of 10 milliwatts per square centimeter. [1926.54(l)]